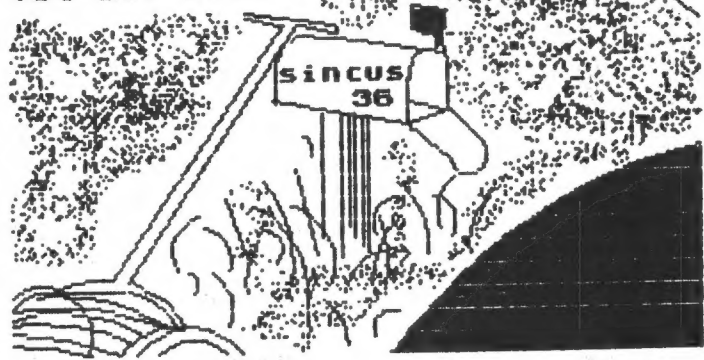


SINCUS News

On the Timex-Sinclair line
of personal computers

Ahh...MAY!
MAY/JUN 86
VOL IV: NO.4



SINCUS NEWS VOL 4: NO 4
POST OFFICE BOX 36, JOHNSON CITY, NEW YORK 13790

Secretary's Notes:

April 16, 1986 - 7pm, Vestal Library, the monthly SINCUS meet was held, 14 attending.

It was decided to get the next issue (this one) out to the membership a month earlier than usual as elections are next month. MAY 21, annual elections will be held. With only one slate of officers running for office, it will be your last chance for another year to put your name or best friend's in. The list of candidates and office, to date: The nominations were opened by Gary, closed by John Sims and seconded by Scott Eddy - to make all that official -

President.....John Sims(current Vice pres)
Vice president.....Gary Ennis (current Hizzhonor)
Treasurer.....George Penney (current officer)
Secretary.....Paul Hill (same one as last time)
Trustees.....Don Lamen (these three
Dave Schoenvetter guys were
Wes Brzozowski here last year)

Any last minute write-ins or floor nominations must have candidates willingness to serve. No sense electing someone who doesn't want to or can't serve the group.

SUNDAY - May 18 at the Vestal Library, from 2 to 5pm, the hardware project committee and all who show up will be treated to a how to solder your own full size keyboard up, a monitor jack for the TS1000, and Hal's recorder transformer in a pill bottle will be the main menu. Clyde Tackley has ideas for plug in cartridges, and other possible projects.

The EMC disc drive was demoed, well sorta, Gary got the Portuguese set up, the TC2068, and 3" Disc Drive set to go and it musta got car sick cause, it was NO go. Gary reports that it worked fine when he got it home! Figures. Well, the stuff looks neat, and having used it before, can say it is so FAST,

the only thing faster is EEPROMs. You can still buy a Portuguese disc drive setup from ZEDRA, not exactly like the one almost demoed, but almost.

Speaking of which, Clyde had several EEPROMS and a zero force insertion socket, and he had the programs up and running like WOW! He got his from Doug Devey and the gang at Triangle Users Group, 206 James St. Carrboro, NC 27510.

We were also treated to a view of Lenslock, the fun game that comes with a helicopter flight simulator wrapped around it. It took two tries by a novice to read the blinken code. This was on a hi res RGB monitor, I bet on the old TV it is something else.

The life of the lens surely can't be long with a couple under ten year olds in the house! But you can get replacements if you return the broken pieces-all the broken pieces, please!!

We never did see the game in action. This will be a treat for the physically or visually impaired, at least the 2068/SPECTRUM loads easier than the old ZX81. These guys at Digital Intergration are not out to lunch, even the documentation is black on blue, almost impossible to photocopy. But, if you can't copy the lense, why worry about the documentation?

Thanks Gary for the demos, maybe next month??

SINCLAIR sells out to AMSTRAD for \$7 million-details on next page.

Timex to market flat screen TV- a 20 pound price drop in England right off the bat!

QL production halted-future of the QL in doubt.

Timex to market a new computer -the 8602 ?? Mar/Apr Syncware News.

APRIL FOOLS DAY JOKE - how many started dreaming after they read that? The last item anyway- the rest are real!!

From many sources...Sinclair sells his computer business to Anstrad. New York Times, April 14, 1986 gives many details on both Clive and Anstrad's Alan Sugar. Many facts have come to light via Comuserve, source unknown, but have heard same from other sources: Sinclair Research Limited (SRL) has sold its home computer business. Includes all current and future manufacturing and marketing rights, to Anstrad Consumer Electronics. SRL will continue with its research and development, including the Pandora portable....Anstrad paid over \$7 million for worldwide rights to produce and market Sinclair computers. Anstrad will have exclusive use of Sinclair's name. ...Anstrad will advise software developers on how to get the most from the computers (most like bundle packaging) and special Anstrad logo will go on approved software. ...QL has ceased production, future is uncertain, Anstrad is destocking the QL stock and related stock. Possible redesign with disc instead of the microdrives. QL's current price is less than Anstrad's Word Processor system that they will be selling thru Sears. QL's current memory capacity is small for the processor, so if continued, add on memory, discs and higher price tag. ...SRL announced it has granted worldwide distribution rights for the flat screen TV to TINEX. Tinex will reduce the price from \$99 to \$79. ...Anstrad is strictly a marketing venture, does not own manufacturing plants, instead contracts to Korean and other Far East electronic firms. Look for popular selling items, most likely bundled-computer, printer, software, monitor, etc for very low price. New ideas, new trends look to third party support as usual. ...Clive will still be in the lab brewing up electronic widgets, and the marketing wizards will try to make the green on them. Like in the jungle, survival of the fittest, and Mr. Sugar makes money, and doesn't run a social club. As US vendors have been told -order 5g's worth of QL goodies, or no business!

The TINEX computer deal, a 68020 processor based computer to run all software ever written was carried in Syncware News, Mar/Apr and picked up on by every newsletter, and exposed as the annual April Fool's Day joke, ha,ha and now a word from Tinex/Anstrad..."Today we are happy to announce...here we go"

What's going to happen to the QL? Another orphan computer? Are the prices going to fall? How many QLs are out there? Where do the QL owners turn to?? Sinclair is outa the selling business, and Anstrad isn't selling them yet??!!

From Joe C. Smith Jr., PO BOX B-36085, Florence AZ 85232- Joe sent a flyer on his book "200 Computer Programs In BASIC For The T/S-1000 Z/X-81 T/S-2068" for \$7.95 + \$1.50 P&H and it is available exclusively from: BIT/S Software, 3202 West Fillmore, Phoenix, AZ 85009 : the list of all 200 programs is impressive, has many interesting sounding names RANDVIGGIE, SECRET WRITING MACHINE, SUN DIAL, TEXAS, SOLAR and 195 others.

I read a story in a newsletter about a 2068 owner who couldn't make mailing lists with out a bunch a hard work so he bought the QL-all we do is LOAD in the Aerco Print Driver Routine, LOAD in

Yu-File, do the POKE for line suppress, and we're off printing mailing labels like no sweat, a lot cheaper than the QL, and it works.

Mscript & modem owners-Jack Bohany and Kurt Casby have worked up some software to ease the pain of getting Mscript files to Mtera-contact Jack and Kurt for their programs, and don't forget a contribution for their efforts:

Jack Bohany	Kurt Casby
325 O'connor Street	25 Battle Creek Crt
Menlo Park, CA 94025	St. Paul, MN 55119

Clyde Tackley got the program by Casby and will be giving a report next month on file handling capabilities. Jack also has finished version five of Mscript- and it is a much needed improvement over the last, and it doesn't CRASH so much as did the older new version I just brought in November.

CAPITAL AREA T/S USERS GROUP, PO BOX 725, Bladensburg, MD 20710 had a good idea-2 members are bulk purchasing 100 SCLB chips for the 2068 to solve future problems. Maybe we ought to look into this ??

TS1000 programs NEW- see ad on page 11, SUN, March 1986, Weynill Corp. Box 5904, Bellingham, WA 98227-5904...hi res graphic software for the 1000, also MINI INOD for 1000/modem either Westridge or Byte-Back. SUN has a little something for everyone this month. Write SUN 3224 Northwest 30th Avenue, Gainesville, FL 32605

As of this date, April 27, response to disc user survey has been a little slow, and response to dealer/manufacture has been likewise, for basically free advertising, I don't know why the foot dragging. Without manufacturers help I will do the article based on user comments.

ZX Computing-"MONTHLY" received late April, distribution will be at the meet, for those I cannot believe to. Since Gary and Carl are not with Computer Done any more, that is out as a drop off point. A cassette game (Spectrum) taped to every mag! I don't want to mail it and have it destroyed. I like the new format-and they don't pull punches on software reviews!!

Check the date on the mailing label, if it says RENEWING?, this is your LAST copy until we get a renewal payment-still \$8 a year. Thanks to Cem Barut and Bob Glider for the renewals, Hello and welcome to Peter Hoffmann, Conn. and Sheldon Weinberg, Brooklyn, NY-note to all-we always need your input-write an article today and mail in with the renewal check!!!!

Hey get your CLONE backup those programs right here Members only



Send your \$6 to
SINCUS
PO BOX 36
JOHNSON CITY NY 13790

renew membership & buy CLONE = \$14

Sometimes it's worth taking a little look at where we've been so we can appreciate where we are. We may feel that the present support for the T/S computers is nothing less than abysmal. While this maybe true by modern standards, just a short look back can show us how quickly we forget and perhaps, how spoiled we've become.

Having been involved with personal computers for about years, I've been privileged to see the field evolve, first hand.

I've been able to work with many of the old gadgets that have come along, over the years. In other cases, I've been at least been able to see the items, or talk to those who've used them.

The vast changes we've had are absolutely breathtaking.

This will not be a comprehensive history of home computing. There's not enough space (or reader interest) for it. We'll just cover a few highlights to give a feel for computing in the past. Note that I've tried to make this as accurate as possible, verifying my facts and figures wherever I could.

Still, some parts are done entirely from memory and a "verbal bug" or two may creep in. If so, please forgive me.

What computers were available 12 years ago? They might have been more aptly called "computer trainers". You might answer an ad in an electronics magazine, send hundreds of dollars, and get a bag of parts. These would be assembled into a little gadget that you "programmed" by flipping some switches.

The output would be some little lights. Some of these items actually contained an obsolete 4004 or 8008 microprocessor.

Your program was machine code which you entered in binary form. There was no cassette interface, as there wasn't enough memory to make it necessary. Some early enthusiasts bought and learned from these, others felt them too limiting and avoided them.

The next alternative was to design and build your own computer. Since commercial support was unheard of, you didn't have to be compatible with anything. Some didn't even use microprocessors. The then "top-of-the-line" chip, Intel's 8080A then cost about \$180 apiece. Others were difficult to use and still quite costly. So some home designed computers included a custom CPU built from TTL chips. Instruction sets were crude and limited, but they were fantastic toys. (My own first machine had an average instruction length of 18 BITS, which were read one at a time, out of about four thousand bits of core memory. I was real proud of it; it almost worked properly.)

A third alternative was possible. If you wanted to spend a thousand bucks or so, you could buy a commercial trainer for a particular microprocessor. These were intended for electronics firms that wanted to develop their own microprocessor based products, and were priced to match what such firms could afford to pay. Home users who could afford (or even obtain) these, were rare and much envied.

On or about 1975, however, several significant things happened. First, one of Intel's competitors started selling 8080 microprocessors for only \$30 each. Now, they were cheap enough for the masses. Also, a company named MITS packaged the 8080 in a large box with a huge power supply, 4K of RAM, and lots of slots for expansion cards. This box was the ALTAIR 8800. For about \$500, you could get a "bare bones" ALTAIR in

kit form. For another couple hundred, you could get it assembled and tested (and it was worth it, I'm told).

The existence of expansion cards brought some interesting results. Some companies didn't want to make entire computers, but were glad to build cards that would plug into the ALTAIR. Others that did market their own computers used the ALTAIR's internal bus, so that they'd be compatible with all the available plug-in cards. The first home computer standard was born. It turned out to be both an unwanted baby and one of the ugliest offspring ever seen! the S-100 bus.

You see, MITS never tried to produce a standard; they just wanted an easy way to connect several of their circuit boards together. The 8080 microprocessor produces some very weird signals that were intended to be "sorted out" by a separate system controller chip. This chip would "hide" the weird signals, and present us with saner, easier-to-use ones. Unfortunately, this chip wasn't available when the ALTAIR was designed, and all the "flakey stuff" was put right on the bus. When the system controller chip became available, it really couldn't be included.

Also, this "convenient" way of wiring several boards together made a signal layout that was very inconvenient for later designers. All of this gave rise to speculation that, if you locked 20 monkeys in a room with an 8080 pinout, they'd only take 10 minutes to design the S-100 bus. The home computer field was burdened with this "thing" for years; traces still remain.

The bare-bones ALTAIR was programmed in binary by flipping switches on the front panel. The only output was LED's. In this way, it resembled its predecessors, a bit. The difference is, it was a bit prettier, a lot more expandable, and a whole lot more expensive.

What could you plug into a S-100 type computer? Memory for one thing. A mere two hundred bucks would get you a 4K memory card. Disk drives? No problem. It was about \$400 for the interface and \$500 for each drive. Rather use cassette? The cassette interface cost only \$175, and was SLOW. Other add-ons, and include keyboards (the ALTAIR ordinarily had none), an interface for a TV or monitor, or analog or digital I/O. In 1977, a full 64K RAM board could be had for \$3900. The expandability of this thing was only limited by the depth of your pocketbook!

These machines normally had no internal ROM. In order to get the cassette interface to work, you had to "toggle in" a 20 byte machine code bootstrap program everytime you powered the machine up. You might then LOAD in BASIC, for example, provided you paid the hundred bucks or so to buy (!!) it.

Perhaps it was the BASICs for these machines that gave the first warning that software piracy would someday be a great problem. Most "old timers" will never forget the letter in one computer magazine by a seller of BASIC. The gentleman thanked the many people who wrote and complimented him on how well the BASIC interpreter worked. He then pointed out that he'd checked his customer list (the product was sold by direct mail, only) and found that only a small fraction of those who wrote had actually BOUGHT the product. He then warned the rest that they'd better pay up.

Unfortunately, the piracy problem hasn't gotten any better.

Home users were very fairly trusting in those days. Many people had no qualms about sending hundreds of dollars to a total stranger to buy a product sight unseen. This innocence vanished after a series of ads appeared in a major magazine, advertising a bunch of non-existent products that the advertiser had no intention of delivering. (He never paid for the ads, either.) Despite some very wild claims that were even inconsistent with the photographs for his "product", the guy managed to take in a fair bit of cash before he vanished. I don't know if he was ever caught.

Those who got the proper word-of-mouth information could have purchased their very own Apple I computer, hand built by Steve Wozniak, himself. Although, this was really intended to be the "guts" of a terminal, it could be used as a stand alone computer. For \$700, you got the assembled, tested circuit board and that was it. You attached your own transformer, keyboard, and monitor. The board had room for a full 8K of RAM, which you programmed, with machine code. The board also had a single expansion slot, into which you could plug a cassette interface, if you chose to buy one. Sounds great, eh?

In 1976, a big step was taken towards affordable home computing with the KIM-1. For \$250 you got an assembled, tested, (and very static sensitive) circuit board. It required multiple power supply voltages, which you had to provide yourself. The board had 1K of RAM, and a small ROM program that controlled a hex keypad and some 7 segment LED displays (your input and output). If you could spring seven or eight hundred bucks for a surplus teletype, it could run that, too. You programmed it in machine code only, but the price was going down!

In 1977, we saw the introduction of the Apple II. It came with an 8K ROM with INTERGER (!) BASIC, a cassette interface about as fast as the TS2068, and graphics and text capabilities only slightly better than a TS2068 in the 32 column mode. It had almost no software available for it. With 48K of RAM, you could get one for \$2,638.

To be sure, the Apple II was designed to be expandable and its original design has been greatly improved. It truly deserves all the success it's enjoyed. But don't forget that people back then paid a huge sum for a machine with little support and capabilities about comparable to the TS2068. Also, don't forget that all the prices mentioned so far should be double to get a comparable 1986 dollar amount.

Back in 1979, I read about this British kook named Sinclair who claimed he could make a computer that hooked to an ordinary TV set, had a alphanumeric keyboard, and BASIC built in, so you didn't have to pay extra for it,...all for about \$200! This sounded like a show stopper, but still highly unlikely, considering the price to performance ratio of the KIM-1. (How was I to know that Clive was so smart?)

Well, of course Clive Sinclair made good on his promise, and his later machines have enriched our lives even as we've enriched his pockets. We've seen the rise in the popularity of his machines, and now we're seeing them decline. As the personal computer field has grown and changed in the past, it will continue in the future. It won't be long before our TS2068s will look just as outrageous as the old MITS ALTAIR looks to us today. And as the support for our machines continues to decline, we'll feel a sense of loss. Yet the old time users had so much less. Our machines are far cheaper, far

easier to use, far more powerful, have far more enthusiasts, and have far more commercial support than they could have ever hoped for. They made out O.K.

So will we.

There's nothing wrong with change, or looking to the future. For quite some time, I've owned an IBM PC, with which I do most of my serious work. Still, my happiest time is spent tinkering with my TS2068. Perhaps it's because we still have a core of interested and interesting users who know how to have fun with the machine. But perhaps it's because I still view the TS2068 with a sense of awe, when I realize how much power there is in such a small, inexpensive package, and how far we've come to achieve it.

THANKS to all who helped out with this RUSH issue:

To Mark Fendrick, for article and data,

To Wes B. for art, articles, help, time and talent,

To John C. for articles, yes they will all get printed,

To Clyde T. for help typing, and his good cheer!

To Gary E. for time, printing, ideas and FOOD!

We need help in publishing a newsletter, every newsletter needs help, offer your help - write a review, a program, a view point, any computer related thought, how do you use your computer? What add ons do you have? write soon and often.

I had hoped for sometime to be able to drop everything and drive out to Cincinnati, for the Computerfest, but the time just isn't there. The car isn't up to it, and I couldn't talk a couple others into the madcap weekend drive out and back. I wish we coulda been there.

CLONE
CLONE
CLONE



To make a tape backup of that \$25 original program, or easily duplicate copies of that program you're going to market, get CLONE. Can LOAD all BASIC & MC in one step and then SAVE it all in one more step. On TS2068 programs, this is all you need. For the more sophisticated copy protection in many Spectrum programs, it can use 2 tape recorders, and the TS2068 (as a noise filter and pulse stretcher) to also make an acceptable backup copy. Runs under both TS2068 and Spectrum ROMs. Easily transferred to the Sinclair Microdrives, (though still for making tape copies), so it can probably be transferred to other mass storage systems, as well. We are selling the copying and distribution rights to other groups. The master copy supplied to each group will include that group's name, address and logo on the cover screen of the program. Dues paying members of SINCUS can obtain a copy for \$6, shipping included, as well as telephone support, for any questions or problems you may have.



send a check for \$6 (for CLONE) made out to 'SINCUS', include your renewal subscription for next year too! make it out for \$14 and mail to:

SINCUS

POB 36

Johnson City, NY 13790

LENSLOK

by Mark Fendrick, Computer Columnist

LENSLOK is a new device used by some software developers as a means to protect their software from illegal copying. It has been met with negative response by many software purchasers, so I would like to put my two cents in here.

Lenslock is a small plastic device, which contains a viewing screen which is composed of a number of prism like pieces of transparent plastic. The device itself is claimed to be virtually indestructible.

Upon loading a LENSLOK protected program (such as Supercharge for the QL) you have to adjust for your particular screen size. You do this by placing your unfolded LENSLOK on the screen and either expanding or contracting it to match the length of your LENSLOK.

Once that is done, you bend your LENSLOK as indicated on the device, line it up with a center line now showing on screen, and attempt to read the letters OK. (HINT: USE ONE EYE, AND LINE IT UP EXACTLY ON THE CENTER LINE. MOVE UP OR DOWN SLIGHTLY UNTIL YOU SEE THE OK). When you have it aligned, and see the proper letters, you are now ready for the final test.

Pressing the space bar will cause a set of randomly chosen letters and/or numbers to be created. Without moving your LENSLOK, they should become readily apparent to you. Enter them properly, and you are admitted to the program. Miss three times and you are locked-out and you must re-enter the program to attempt anew.

At first this device frustrated me and I found myself missing in three attempts. I quickly caught on, though, and now almost always get into the program on the first attempt. Why then the negative response? For one thing, it is an added effort to run a program, and does take a bit of practice. However, the main reason for the complaining is that you cannot now copy a friends program for your own use.

As a software author myself, I am all in favor of this method of piracy protection. (These may or may not agree with those of SINCUS). AS A LEGITIMATE SOFTWARE OWNER/PURCHASER, YOU ARE ABLE TO MAKE UNLIMITED COPIES OF PROGRAMS WHICH WERE OBTAINED IN A LAWFUL MANNER. Your LENSLOK will work on all of your copies, but your friend cannot run an illegal copy, as you have the proper LENSLOK!

Piracy hurts us all, and though no system is foolproof, this is a fair compromise. The lawful owner now may make all the back-up copies he feels he needs (especially simple on the QL) and cannot distribute pirated copies. If the device is ever damaged or broken, you must return all the parts before a replacement is issued.

We should all embrace this protection scheme rather than opposing it.

Thanks for the article Mark. It just so happened that we reviewed a LENSLOCK program at our last meet, and I had a few words for it, on page one. Points of view on pirating also in this issue. Points of view are often determined from your own circumstance, however, when it comes to stealing there can be NO justification.

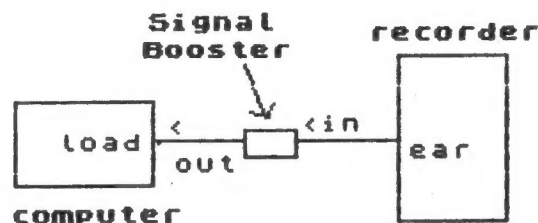
You can contact Mark Fendrick at PO Box 2392, Secaucus, NJ 07094-0992.

SIGNAL BOOSTER

Correct cassette loading problems-by HAL SOHN, SINCUS

The signal booster consists of one miniature audio transformer. The transformer is used as an interface between the computer and the cassette player.

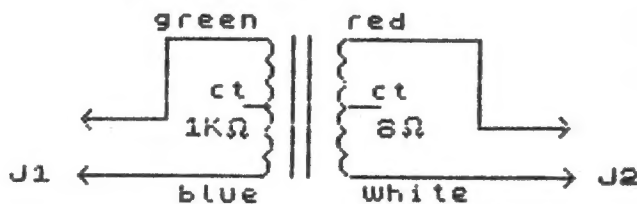
Examples:



The signal booster has the following advantages:

1. Isolates the computer from the cassette player which eliminates noise.
2. Increases the audio signal amplitude.
3. Cassette player volume setting can be adjusted to a lower level, thus improving the signal/noise ratio, this lower level setting decreases the inherent noise caused by high level of volume setting of volume control of most cassette players.
4. Increased signal amplitude, allows for misalignment of the record/playback head, which causes low signal amplitude.
5. No power required.
6. LOW COST

SCHEMATIC: T1



CONSTRUCTION

1. Drill two 0.250 (1/4 inch) holes in a plastic pill bottle, one thru the cap, and the other thru the bottle bottom.
2. Solder transformer leads to jacks (J1) and (J2) as per schematic, then insert into plastic bottle.

NOTE: Don't use a metal container, the metal prevents the proper isolation and grounding between the computer and the cassette player.

Parts list

1. T1-1K CT. to 8 ohms-Radio shack (273-1380)
2. J1 - J2 Radio shack (274-297)
3. Plastic pill bottle to fit transformer

When using signal booster use a lower volume setting for best results.

by JOHN COLONNA, SINCUS

Well, I finally did it. Got myself a modem and now I'm telecommunicating. I was never really interested in using a modem until recently. My interests sometimes seem to be inversely proportional to the price of the product. At one of the club meetings, a member brought in a message he had downloaded from a bulletin board service (BBS) about obtaining a 'bare bones' modem for only \$25.00. Now they were talking my language! This modem was to be fully tested, but without case and power supply. It sounded too good to be true. Then I noticed the supplier's name (Dave Clifford) and remembered reading an article by him in one of the newsletters that the club exchanges. He had a Los Angeles phone number listed so one Saturday afternoon I decided to call him to get some info. There was such a number and person! He told me that he still had 'a few modems left', so I ordered one --- C.O.D. (it must be the skeptic in me). I figured I might as well get as much accomplished as possible on this \$.79 phone call so I asked a few more questions. He informed me that a T/S 1000 power supply (which I had) and a Radio Shack component box (that cost about \$5.00) was all I needed. About three weeks later my carefully packaged modem arrived. Total cost came to less than \$28.00 with shipping and C.O.D. charges. The board itself was not much larger than a slice of toast with an interface and phone line attached. The T/S 1000 power supply connected into the modem jack with no modification and I was able to find the Radio Shack box that fit like a glove. The modem has an LED light to indicate a connection so I put a red lens on the front of the box to make it look better and more utilitarian. With the help of some members who really know their stuff --- Dave Schoenvetter and Clyde Tackley, I really started telecommunicating. Dave shoved me his system in operation, loaned me some software, and then gave me some quick pointers and the all important phone numbers to access. Later, Clyde and I tried to do some telecommunicating that really helped me to understand the difference between my 'toggle conversion' and my 'serial parameters'. It's like anything else with the computer. A lot of the fun (and frustration) is had in trying out the new aspects of the computer (save burning it up). It's the almost ultimate toy! There are always new things to be learned.

I quickly found out that the Broome County area had about a dozen or so active BBS systems with a variety of interests. Most of them are operated by hobbyists. They are all very friendly and there are also a few 'unique' people out there, too. And the message bases really work. I was looking for some information about some of the national BBSs. No sooner had I posted the message than it was receiving replies. (Who needs the traditional post office?) Neophytes are treated with kindness and a lot of patience. I am still trying to find out the difference between 'nodes' and 'nulis', but that's part of the fun. I sure hope some other club members begin 'modeming' so we can exchange thoughts, ideas, and programs over the phone. We don't have many magazines or newsletters with any regularity left. We will have to expand our horizons over the phone lines. Clyde Tackley has a BBS program; I wonder

if anyone would like to be the SYSOP (system operator).

While browsing in one of the local bookstores, I noticed a CompuServe kit. CompuServe is one of the most widely known and used national (or international for that matter) bulletin board services. The starter kit cost just a few dollars more than the free connect time included in it. Whereas before I thought I did not want to or could not afford to use the service, my interest was suddenly growing. That inverse proportional formula was working again!

MODEM

NEWS

There are about a dozen Bulletin Board Systems currently operating in the Triple Cities area. One of the more popular boards and the one that supports Timex/Sinclair users is the Owego Free Academy (OFA) BBS. The board can be accessed from either of two telephone numbers. One is an Owego number (607-687-4346) and the other is an Endicott number (607-754-3420). The OFA Board has a library of Timex programs, documentation, and listings. Some of the programs that can be downloaded are listed below.

README.DOC - Directions for files with Timex-Mterm

LCLBBS.LST - A listing of local bulletin board numbers

TASTERM.DOC - Timex Mterm buffer text from Tasword Two

PRTPATCH.DOC - Alter Mterm to use the Aerco Cent. I/F

TICTACTOE.BTS - Traditional game adapted for computer use

GRDBK.BTS - A gradebook for teachers

BIORTMS.BTS - Biorhythms program

3DWORDS.BTS - Makes various size letters in 3-D on ZX printer

DOODLEJOY - A drawing program with the joystick

SINCUS-IV-3-5 - Sincus News article on 'A Phrasebook of Computerese' by W. Brzozowski

NAVIGATING THROUGH THE DISPLAY FILE JUNGLE BY WES BRZOWSKI

At least one reader was disappointed with my April Fool article on display files, last time. He'd first thought that someone finally got around to making the whacky display file on the TS 2068 more navigable. Well, we can do that too!

Those who've manipulated the nice orderly display file on the ZX-81/TS 1000 have been somewhat perplexed by the TS 2068. Yes the illustration on page 251 of the users manual that comes with the TS 2068 does explain it. Still, most everyone reacts with the question, "Why?"

This configuration was made to dovetail with the Z-80 instruction set to allow us to do some reasonably fast display file operations. But only if we understand how.

If you've ever watched the distinctive way that a SCREEN# is LOADED into the computer, 8 character lines at a time, you've actually seen the odd display layout. If you've taken an elementary digital design course, you may also have noted the similarity between that pattern and the nice regular spacing of some variables on a Karnaugh map.

This might lead you to suspect that the strange display file layout is due simply to the rearranging of several address lines in the display circuitry. If so, you'd be correct. What this means is, we can start with a nice orderly row-column notation, and transform it to the display file notation simply by swapping several bits. Why then did they deliberately miswire the display hardware?

There are some good reasons, honest! If we look at some of the computers that the "big kids" use, we see that they have both text and graphic display modes. These modes are set in the display hardware. The graphics modes are, of course, simply to allow us to do graphic work. The text modes, however, relieve the computer of having to figure out which pixels to set in order to put a particular character on the screen. That's all done in hardware. This buys us speed, at the expense of extra hardware. While the speed increase may not be noticeable when just a few words are put on the screen, there's a definite difference when an entire screen of text is put up.

We might say that the TS2068 has no text modes, only graphics modes.

The "text modes" are simulated in software. (The TS2068 DOES have to figure out which pixels need to be set in order to put a certain character on the screen). This means that text operations to the screen will be somewhat slow.

To compensate, the machines designers used every trick they had to speed up this function.

For example, many readers are aware that the "pixel patterns" for the display characters are stored in a table at the top of the ROM, 8 bytes per character. Because we have the option to produce our own pixel patterns, the system variable CHAR# "almost" points to this table. (Actually, CHAR# points to a spot 256 bytes BELOW the table's address).

Now, to find the pixel pattern for a particular ASCII

CHAR# "almost" points to this table. (Actually, CHAR# points to a spot 256 bytes BELOW the table's address).

Now, to find the pixel pattern for a particular ASCII character, we do the following things:

1. Put the ASCII value in a register PAIR.
2. Shift the value left 3 bits.
3. Add the value in CHAR# to this.

And we have the address of the pixel pattern! Here's why. First the pixel patterns for the various characters are arranged in the order of their ASCII value. The first 8 bytes are the pattern for a blank space, which is decimal 32, and so on. The left shift multiplies everything by 8, since each pattern takes up 8 bytes. Now, since the value of the first character is not zero, but decimal 32. We'd ordinarily have to subtract (32x8) or 256 from this result to get the proper displacement into the CHAR# table. But the value in CHAR# is already 256 counts LOWER than the address of the table, and so the subtraction doesn't have to be done! This saves us some time in computing the address. It's not a lot of time, but every little bit helps.

Once we have the address of the 8 bit pixel pattern bytes, we have to figure out where in the display file to put them. Before we do this, please read over the description in the box on going from a 3 pixel row-column notation to the display file notation. This starts us with a pixel row and column, and transforms them to a memory address and a bit position within the memory byte. NOTE that my pixel notation is not the same as the one used by BASIC; see page 152 of the TS2068 users manual. Basic has to first transform to it's own pixel notation into the one I show here, and THEN it transforms that to a display file position. (Silly but true).

Finding the display file location is the topmost byte of the character is easily done when you understand the description in the box. However, doing the same thing 8 times for each character would waste a lot of time. Fortunately, when you know where one pixel line for a character is located, it's very easy to find others. Look in the box at the TS2068/Spectrum display file format. By adding 256 decimal to the address for a given pixel line, we'll get the address of the pixel line below it, because we've just incremented the "pixel line in character" field. We can only do this until the field becomes 111, binary, but at that point we're at the bottom line for the character, and don't WANT to do any more.

Suppose the display file had been laid out in the more orderly fashion? The "pixel line in character" field would be swapped with the "line in 8-group" field. That's all. Then to find the address of the next pixel line we'd add 32 decimal, instead of 256. But this is NOT as convenient.

If the address were in the HL register, for example, we could add 256 by simply doing an INC H. Adding 32 would require us to ADD some other register to HL. This not only takes longer, but ties up an additional register pair. This is even worse, because it turns out we can't easily use the DJNZ instruction

for a test loop if we tie up any extra registers. It may not be obvious until you try to write the code for yourself, but it's so. As things really are, we have just enough registers.

While the ROM display routine uses this trick to gain speed, it loses it again, for other reasons. This is because the same routine also handles the standard graphics characters, user defined graphics tokens, the TS2040 printer, things like INF, BRIGHT, INVERSE, FLASH, and moving the character position in response to AT and TAB. It wastes lots of time checking what it's supposed to be doing, and then saves a little time when it finally gets around to doing it.

So what's the point? Programs like word processors tend to contain their own custom display routines that run VERY fast. The information given in this article is sufficient for the enterprising machine code programmer to write his or her own, and if you've been trying to put data directly into the display file, this might be just what you've been looking for. This will be little help to those who want to PEEK and POKE the display

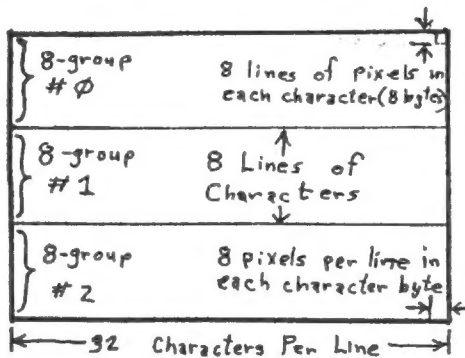
file from BASIC. The BASIC commands for operatin on the display file probably will work faster and are certainly a lot easier. Also note that even in machine code, this odd display file layout will force graphics routines to run slower than they otherwise might, since you have to swap address bits to get the row-column position you want.

But what it does, it does well. While it sacrifices some graphics speed, it gives us a faster text display. In a way, it "narrows the gap" between them. There will be some users who lose out by this design decision, but I think the majority of us would be much more irritated by slower text. Oh well, you can't please everyone.

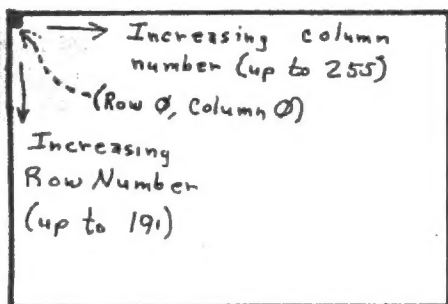
Questions about this (or any other TS2068 stuff)? Write me, Wes Brzozowski, 337 Janice st. Endicott, N.Y. 13760. Please include a stamped, self addressed envelope for a reply. Since I sometimes get swamped you may have to wait a bit, but I will get to you. If you're in a hurry, call me at (607) 785-7807. Try to call before 9:30 PM eastern time. Hope to hear from you!

Going From Pixel Row-Column Notation to Display File Notation

Try to picture the screen as:

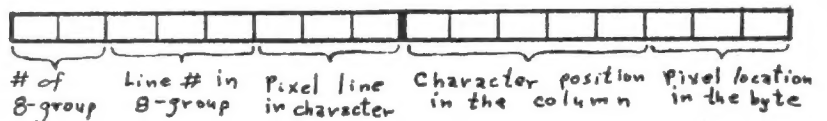


But also try to picture it as:



Both of these notations exist simultaneously

It would be nice to specify a pixel in a double register as:



Because it would be identical to:



But the TS2068 / Spectrum Display file is like this:



This sets the # of Pixel line starting at 4000H
 8-group in character Line in 8-group Character position in column

So, to transform row-column notation to display notation;

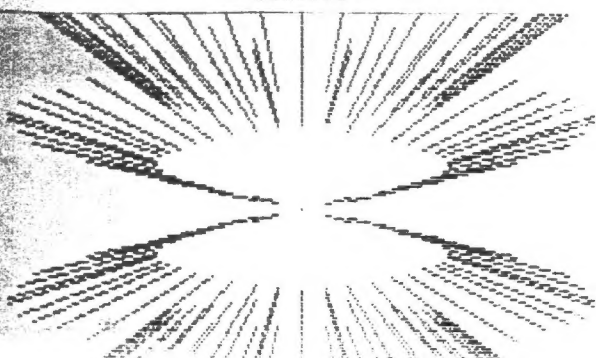
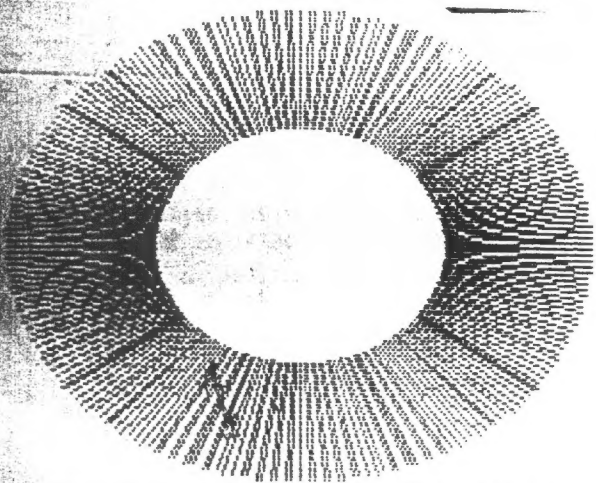
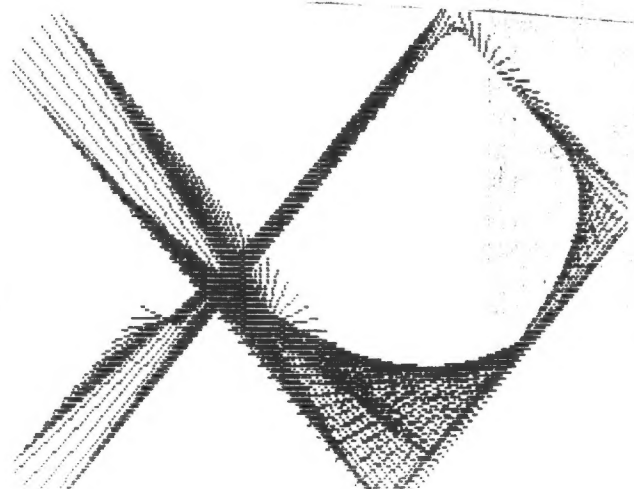
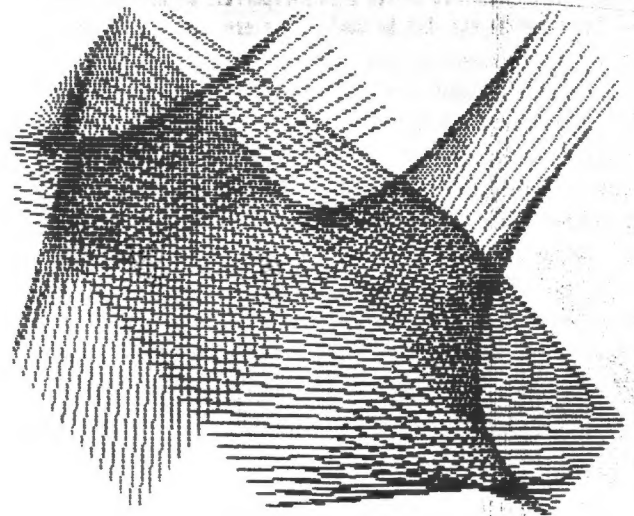
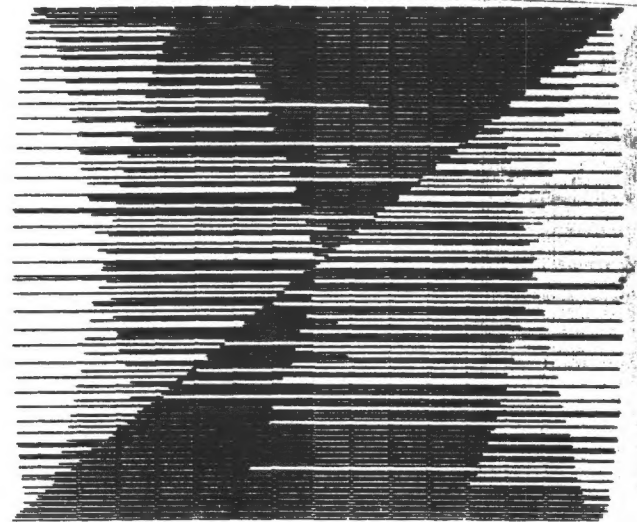
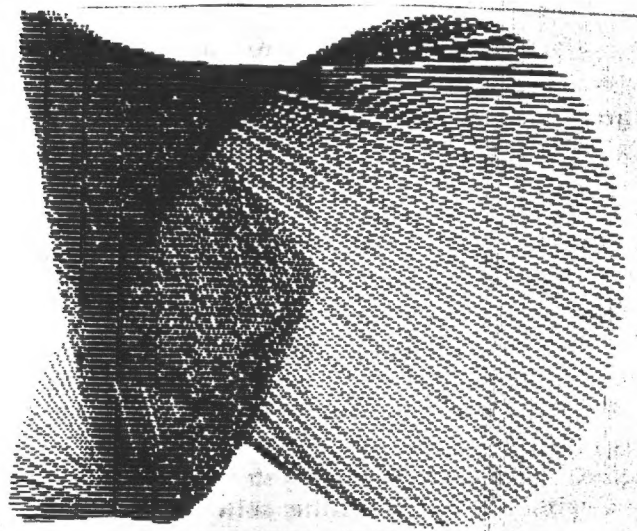
- 1.) Shift right 3 bits, to eliminate "pixel location in byte"
- 2.) Put "010" in the upper 3 bits
- 3.) Swap the "line # in 8-group" and "pixel line in character" fields at their NEW positions
- 4.) This gives the address of the proper byte. Now use the "pixel location in byte" field to set, reset, or test the proper bit.

Wes Brzozowski
4/23/1986

GRAPHICS by JOHN COLONNA

One of the great benefits of membership in SINCUS is the availability of written material from either the exchange of newsletters from other clubs or other SINCUS members. And when one has some extra time provided by the holiday season, it allows one to catch up on some reading. While looking through some of the newsletters and magazines I ran across three interesting articles dealing with graphics on the 2058. All three programs were very easy to type in. No program was longer than fifteen lines and they produced great results!

The results of the first program is shown below. It is from part of a program in SUM magazine, June 1985, by Andy Centek, Jr. Art from the second program is shown at the top right. It is from a TS HORIZONS article of November 1985 that was originally in SYNAPSE magazine. In this program four random numbers are input to produce various designs. This one took a long time to fully develop and produced interesting designs. One could sit at the screen for hours and be amazed at the intricate fine art. The third set of artworks produced was from an article in SYNCQUARE NEWS, March/April 1985, by David Kulp. See bottom right. This one produced continuous specimens of art. This one was the most pleasing to me because of the inverse effect (not shown here). If I had one of those flat screen televisions that Sir Ctive was working on, I would hang it on the wall and have a continuous living work of art!



STEALING

by Jim Peterson

I have been asked to respond to an article by [Paul Hill], entitled "Thoughts on Copying Software", (SINCUS NEWS, Sep/Oct '85), which was a response to my article entitled "Stealing" (ATSU Computer Users June/July '85 issue).

First, may I briefly give my credentials. I am a commercial programmer, under the name of TIGERCUB SOFTWARE, writing entertainment, education and programming utility programs for the TI99/4A computer. My catalog list over 130 original programs - far more than any other TI software dealer - at only \$3 each - others are selling public domain software for that price! As disk collections, my prices are even lower. In three years (sic) in business, I have had two complaints about my programs - and my reputation has also been established by the more than 100 programs which I have published for the public domain and given away in my newsletter to user groups.

And yet, in the past three years, I have earned less than the Federal minimum wage for the hours I have spent at this keyboard. The reason? Stealing! And I will not insult the memory of the pirates of old by referring to the sneaky thievery of software by the name of piracy!

It is not that my software has been that widely copied. It has never sold well enough to be readily available for copying! And why is that? The real problem is that "piracy" has become so widespread that the average computer user does not even consider buying his software, regardless of the price or quality. He will feed his kid on cornflakes and Kool-Aid while he saves his pennies to upgrade his system with peripherals he neither needs nor knows how to use, but he won't buy a program because someday he might get a chance to copy it for free.

(Mr. Hill) listed many excuses given by users for their thievery. I have heard (sic) them all, and many others. There is only one possibly legitimate excuse - that the program is no longer on the market. In that case, copying might be morally justified - although it is still illegal.

You just want to try it out first, see if it works, see if it is any good? If someone is willing to let you copy it, surely he is willing to let you try it out rather than copying it, or demonstrate it and tell you how it works. That's really a flimsy excuse, isn't it?

You just want to take it apart and see how it's programmed? You really think you have a right to steal a programmer's ideas and knowledge without buying his product?

It doesn't work, anyway? You're trying to run a stolen copy without documentation, and you're complaining? Now that's really stupid!

You copied it because you thought it was overpriced? Why didn't you go to a computer store and shoplift a copy? You don't dare? You'd rather do your stealing where it's safer?

It's nothing you really want, you'd never buy it, so there's no harm done? You steal things you don't even need? That's called kleptomania - a good psychiatrist could help you.

I will certainly agree that much software is overpriced. The main reason is that the programmer or distributor is

Trying to recover his investment "off the top" before the program is pirated to death. Also, if you're not in the business you have no idea what a large chunk of that price goes into advertising and distribution. But, if you think the price is too high, do what you would do in the case of any other product - pay the price or do without. Or go out and shoplift it, if you want to be a thief.

And I will also agree that a lot of junk is being sold - in software, and in every other commodity on the market! Your recourse is the same as with any other junk merchandise. If a product fails to perform its intended purpose, you have a legal right to a refund. If it merely fails to live up to your expectations, you have a right to refrain from buying from that seller again. I don't live (sic) to buy a pig in a poke either - that's why I never buy an expensive program until I have read a favorable review in a publication which I trust. But - the fact fact that one person sold you junk does not entitle you to steal from everyone else.

Regarding backup copies - they are perfectly legal! The law clearly permits you to make an "archival" copy to be used in case your master goes bad. There are differences of opinion as to whether you can make more than one, but you won't be doing any harm. However, it is illegal to use your backup while the master is loaned out to someone, or to use the backup after you have sold the master, obviously!

As for limited licenses with regard to reselling, etc., my understanding is that they are totally invalid unless you were made aware of the restrictions, and agreed to them, BEFORE you made the purchase!

NOW stop and think for a moment what it would be like if all computers provided an absolutely foolproof and simple protection method, if it was impossible to steal a copyrighted program. Programming would then be profitable. Hundreds and hundreds of people would be trying to make a buck - and very little would be turned loose as public domain or freeware! But, there would be tens of thousands of programs on the market, and then competition would drive prices down to rock bottom. True, 95% of the stuff would be pure junk - but the good programmers would soon get a reputation, and the baddies would get a different kind of reputation.

However, that will never happen. The stealing will continue, and laws will do no good. Fathers are teaching their children that "Thou shalt not steal - unless it's a computer program", so the next generation will be no better. And so the computer will never become as useful as it could be, because the programs that people need will never be written. Too bad, isn't it?

Thoughts PART II

by Paul Hill, SINCUS

I took the liberty of copying Mr. Peterson's column from the Feb '86 issue of the ATSU Home Computer Users, and correcting the impression that Wes Brzozowski was the author. The spelling was left as printed, but marked with (sic), as I do not want to assume too much.

I had written the article last September as sort of tongue in cheek, a "cute" idea. As I got into the column, (the one I wrote), I began to recall my own frustrations with early commercial software, and began to mud sling, take on many

generalities, but tried to show WHY pirates steal software. All of the software I have dealt with is for the Timex-Sinclair line, and I have not yet experienced any shrink wrap restrictions. I have no personal experience with business software, although some of TS software is used by some in small businesses.

...Who is GUILTY of stealing software?

It isn't the sellers of course...It isn't the programmers for pete sake!...It isn't the advertisers or the magazines that review the software!

It is the software BUYERS!!

NO body could copy illegally one piece of software that wasn't bought by a buyer...Unless of course one shoplifted it. So, now the culprit is IDeed, is you, you...buyer, you! All us low down sneakier than pirate low life couldn't exist with out you money spending buyers.

So, now all the retailers and programmers gotta do is get a couple a 2 x 4s, and wait behind the counters and as soon as Mr. Buyer reaches for the wallet - WHAM - BAM - PAZOW! right across the back of the head. Boy that'll stop the SOB's from copying ever again.!!

Whoa, there fella, that's a little heavy, I mean who can afford a 2 X 4 every time a buyer walks into a computer store. And what about them mail-order coyotes? Have the mailman vack their fingers with a phone bill? There's gotta be somepin' a little less strenous on the back, like make the notha sign a legal document over his fingerprints binding over his first born even if he dares think about copying! Yeah, get his social security number, mother's maiden name and her social security checks, and just to be safe...

Just how much time is all this gona take, Jack? If it takes a minute, it will take an hour, and then he'll probably want ask a question on the use of the software fer Pete's sake. Or if it's guaranteed!...there's gotta be a faster, neater way, what would you do with all them first borns, anyway?

Well,...what if you just get every legit owner on a mailing list, and the publisher takes matters into his own hands, like mailing out updates, clarifying the documentation, offering new programs at wholesale prices, keeping in touch with each and every buyer. What if the buyer had a hot line to call? And what if this legit owner introduces a new user to buying the program, how about a finder's fee?

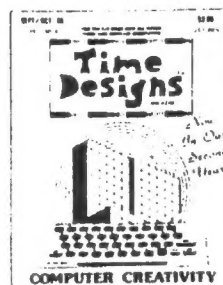
Taking this a step further, what if retailers dealt with User groups, releasing new software to a UG, who pays \$X per member and in turn reproduces the program and documentation and sells the program for \$I+Y profit for the UG. The UG benefits, the dealer gets his money up front, and the programmer gets potential reviewers good and bad, which makes it harder or easier to sell the next UG. Ads and distribution costs are

reduced, and if interest is high, further ads and distribution costs are warranted. And users have immediate hand holding available to them.

I don't have the answers to stopping piracy, but blaming everyone in sight doesn't help solve the problem. Educated users, aware of their responsibilities will help. What I am pointing out, is that the very people you are jumping on are the very ones who buy! So much of everything is copied, on office and home copiers, TV VCRs, tape decks, floppy discs, in schools, in colleges, and in industries, that the line for what is right and wrong easily becomes blurred. The schools, industry and parents have the responsibility to teach what is right. The rightful owners have to stand up and say no to illegal copying. The current situation of illegal copying (who really knows how big?) will lead to uncopyable software cartridges or some other medium, and it will cost more, do less, and have no backup. I do know the situation is bad, but how bad is a guess on anyone's part. Do your part, promote software that you like, and badmouth the bad stuff, but dont pass it around.

Computer Shopper has had several columns on Piracy, and several UGs have had discussions on piracy. The subject is out in the open, the results of piracy are real, fewer programs, more expensive, and more copy protection. I feel that passing around copies does get more exposure to the programs, but if the program is worth using, it is worth sending for the legal copy! If it isn't any good, destroy the copy.

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